



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D5491-041
Job Sheet 181797



Part No: D5491-041

Job Qty: 6 ea

Part Name: Step Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 8/9/18

Job Tracking No:

Due Date: 8/17/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: D5491 REV:B IPP REV:A 18.04.04 NEW ISSUE DD VERF:JFS IPP REV:B 18/08/02 AS PER DWG REV.B
JFS VERF BY:DP

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	6 Ea	8/17/18	8/17/18	0.00	0.00	Start Up Small Fab-4		
110	Small Fab	6 pcs	8/17/18	8/17/18	0.00	50.00	Small Fab-8		
120	QC	6 pcs	8/17/18	8/17/18	0.00	0.00	QC5		
130	SprayPaint	6 pcs	8/17/18	8/17/18	0.00	3.00	Spray Paint		
140	QC	6 pcs	8/17/18	8/17/18	0.00	0.00	QC14		
150	HandFinish	6 pcs	8/17/18	8/17/18	0.00	3.00	HandFinish3		
160	QC	6 pcs	8/17/18	8/17/18	0.00	0.00	QC3		
170	Packaging	6 pcs	8/17/18	8/17/18	0.00	0.00	Packaging3-2		
180	QC21-SA	6 Ea	8/17/18	8/17/18	0.00	0.00	QC21		

Part Op 110 - 1- ASSEMBLE FIXTURE DT10384 WITH BLOC "A", "B" AND "C" TO MANUFACTURE D5491-041 2- ASSEMBLE
Descriptions: D5273-043 FITTINGS TO D5491-1 STEP WITH PROSEAL AS PER DWG A/R PROSEAL: 3- INSERT
ALL PARTS TOGETHER IN FIXTURE DT10384 AND TRANSFER DRILL HOLES USING DT10186 FOR D5499-1 AND
DT 10185 FOR D5499-1 AS PER DWG AND NOTES 8,9. 4- DISASSEMBLE AND DEBURR. 5- a) USE DT10170 DRILL
JIG TO DRILL NUT PLATE HOLES IN D5627-1 TUBE AS PER DWG. b) DEBURR c) TOUCH UP HOLES WITH
ALODINE ONLY d) INSTALL NUTPLATES IN TUBES 6- TOUCH UP HOLES WITH ALODINE ONLY ON D5627 AND
D5273-041 FITTINGS. 7- USE DT10384 TO RE-ASSEMBLE REST OF THE PARTS TOGETHER USING PROSEAL AS
PER DWG A/R PROSEAL: CURE TIME 24h:
130 - Prime and paint as per dwg. ***MASK SLOTS AS PER NOTE 10*** Primer 5163577 Paint 5166819
150 - 1- MASK SCREWS AS PER DWG AND APPLY WING WALK AS PER DWG. 2- INSTALL PLACARD AS PER
DWG. (NOTE11)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
CR3212-4-5	Cherry Rivet	36 Ea (6 ea)	90-Start up Operation	
CR3242-4-4	Rivet	48 Ea (8 ea)	90-Start up Operation	
D5273-043	End Fitting Assembly	6 Ea (1 ea)	90-Start up Operation	
D5291-041	Radius Block Assembly	18 Ea (3 ea)	90-Start up Operation	
D5625-1	Receptacle	24 pcs (4 ea)	90-Start up Operation	5104164X2 5112955122
MS21042L3	Nut	12 Ea (2 ea)	90-Start up Operation	
MS24694-S50	Screw	48 Ea (8 ea)	90-Start up Operation	
MS24694-S98	Screw	18 Ea (3 ea)	90-Start up Operation	
MS27039-1-10	Screw	6 Ea (1 ea)	90-Start up Operation	
MS27039-1-30	Screw	12 Ea (2 ea)	90-Start up Operation	
NAS1149D0332J	Washer	12 Ea (2 ea)	90-Start up Operation	
NAS1149D0363J	Washer	24 Ea (4 ea)	90-Start up Operation	
CR3212-4-05	Cherry Rivet	36 Ea (6 ea)	110-Small Fab	5105480
CR3242-4-4	Rivet	48 Ea (8 ea)	110-Small Fab	5104322
D5491-1	Step Extrusion	6 pcs (1 ea)	110-Small Fab	
D5499-1	Aft Bracket Mount	6 pcs (1 ea)	110-Small Fab	
D5627-1	Tube	6 Ea (1 ea)	110-Small Fab	
D5629-041	End Cap Assembly	6 pcs (1 ea)	110-Small Fab	
MS21042L3	Nut	12 Ea (2 ea)	110-Small Fab	5132364
MS24694-S50	Screw	48 Ea (8 ea)	110-Small Fab	5093692
MS24694-S98	Screw	18 Ea (3 ea)	110-Small Fab	5051536
MS27039-1-10	Screw	6 Ea (1 ea)	110-Small Fab	5124663
MS27039-1-30	Screw	12 Ea (2 ea)	110-Small Fab	5062615
NAS1149D0332J	Washer	12 Ea (2 ea)	110-Small Fab	5113757
NAS1149D0363J	Washer	24 Ea (4 ea)	110-Small Fab	5105782
D2137	Decal(No Step)	6 pcs (1 ea)	150-HandFinish	5160496

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	CR3212-4-5	36	265	0
	CR3242-4-4	48	343	0
	D5273-043	6	23	0
	D5291-041	18	162	0
	D5625-1	24	100	0
	MS21042L3	12	2,404	0
	MS24694-S50	48	246	0
	MS24694-S98	18	144	0
	MS27039-1-10	6	167	0
	MS27039-1-30	12	32	0
	NAS1149D0332J	12	2,128	0
	NAS1149D0363J	24	1,805	0
	CR3212-4-05	36	188	0
	CR3242-4-4	48	343	0
110-Small Fab	D5491-1	6	7	0
	D5499-1	6	0	0
	D5627-1	6	6	0
	D5629-041	6	0	0
	MS21042L3	12	2,404	0
	MS24694-S50	48	246	0
	MS24694-S98	18	144	0
	MS27039-1-10	6	167	0
	MS27039-1-30	12	32	0
	NAS1149D0332J	12	2,128	0
	NAS1149D0363J	24	1,805	0
	D2137	6	29	0
150-HandFinish				

Part Specifications

Specifications could not be found.

Job 182168

A350-S91-411

Ship to Calgary



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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D5491-041
Job Sheet 181797



Part No: D5491-041

Job Qty: 6 ea

Part Name: Step Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 8/9/18

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JFS VERF BY:DP

Ship Via:

5958

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	6 Ea	8/17/18	8/17/18	0.00	0.00	Start Up Small Fab-4		DAS
110	Small Fab	6 pcs	8/17/18	8/17/18	0.00	50.00	Small Fab-8		36
120	QC	6 pcs	8/17/18	8/17/18	0.00	0.00	QC5		9-88
130	SprayPaint	6 pcs	8/17/18	8/17/18	0.00	3.00	Spray Paint		
140	QC	6 pcs	8/17/18	8/17/18	0.00	0.00	QC14		
150	HandFinish	6 pcs	8/17/18	8/17/18	0.00	3.00	HandFinish3		
160	QC	6 pcs	8/17/18	8/17/18	0.00	0.00	QC3		
170	Packaging	6 pcs	8/17/18	8/17/18	0.00	0.00	Packaging3-2		
180	QC21-SA	6 Ea	8/17/18	8/17/18	0.00	0.00	QC21		

Part Op 110 - 1- ASSEMBLE FIXTURE DT10384 WITH BLOC "A","B" AND "C" TO MANUFACTURE D5491-041. 2- ASSEMBLE
Descriptions: D5273-043 FITTINGS TO D5491-1 STEP WITH PROSEAL AS PER DWG A/R PROSEAL: 138976 3- INSERT
ALL PARTS TOGETHER IN FIXTURE DT10384 AND TRANSFER DRILL HOLES USING DT10186 FOR D5499-1 AND
DT 10185 FOR D5499-1 AS PER DWG AND NOTES 8,9. 4- DISASSEMBLE AND DEBURR. 5- a) USE DT10170 DRILL
JIG TO DRILL NUT PLATE HOLES IN D5627-1 TUBE AS PER DWG. b) DEBURR c) TOUCH UP HOLES WITH
ALODINE ONLY d) INSTALL NUTPLATES IN TUBES 6- TOUCH UP HOLES WITH ALODINE ONLY ON D5627 AND
D5273-041 FITTINGS. 7- USE DT10384 TO RE-ASSEMBLE REST OF THE PARTS TOGETHER USING PROSEAL AS
PER DWG A/R PROSEAL: 138926 CURE TIME 24h: 48h
130 - Prime and paint as per dwg. ***MASK SLOTS AS PER NOTE 10***
150 - 1- MASK SCREWS AS PER DWG AND APPLY WING WALK AS PER DWG. 2- INSTALL PLACARD AS PER
DWG. (NOTE11)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
CR3212-4-05	Cherry Rivet	36 Ea (6 ea)	90-Start up Operation	FM13454-1XL FM134537X 34
CR3242-4-4	Rivet	48 Ea (8 ea)	90-Start up Operation	FM13385-1XL FM104332X 7
D5273-043	End Fitting Assembly	6 Ea (1 ea)	90-Start up Operation	FM10606-1XL FM140321 5X
D5291-041	Radius Block Assembly	18 Ea (3 ea)	90-Start up Operation	FM140311
D5491-1	Step Extrusion	6 Ea (1 ea)	90-Start up Operation	FM102474
D5499-1	Aft Bracket Mount	6 Ea (1 ea)	90-Start up Operation	FM109113
D5625-1	Receptacle	24 Ea (4 ea)	90-Start up Operation	FM1067298X4 510 4164/K17
D5627-1	Tube	6 Ea (1 ea)	90-Start up Operation	FM108043
D5629-041	End Cap Assembly	6 Ea (1 ea)	90-Start up Operation	FM109857
MS21042L3	Nut	12 Ea (2 ea)	90-Start up Operation	FM1094592

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		

Root Cause	Pressure/Forced	Temperature/Cure	FAULT CATEGORY
Environment ☐	☐	☐	☐ Power Loss/Surge
Design ☐	☐ Bending	☐ Set-up	☐ Folio/Program
Doc/Data ☐	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain
Equip/Tooling ☐	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld
Handling/Pre ☐	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pullec
Material ☐	☐ Cuffs	☐ Contamination	☐ Out of Sequence
Internal Transport ☐	☐ Crushing	☐ Countersink	☐ Off-set
Tribal Knowledge ☐	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled
LOA ☐	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function
Substation ☐	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center
Past Expiry Date ☐			
Misidentified ☐			

☐ OTHER : _____

Container No: S119025

Part: D5491 - 041

Job No: 181797

Serial No/Batch: S119025

Revision: B

Inspector: _____

Exp Date: _____

Instructions: Various STC's

Date: 10/17/18

DART Aerospace Ltd.
 1270 Aberdeen Street
 Hawkesbury, ON K6A 1K7
 CANADA
 TEL: 1 613 532-5500
 Email: sales@dartaero.com
 www.dartaerospace.com

MS24694-S50	Screw	48 Ea (8 ea)	90-Start up Operation
MS24694-S98	Screw	18 Ea (3 ea)	90-Start up Operation
MS27039-1-10	Screw	6 Ea (1 ea)	90-Start up Operation
MS27039-1-30	Screw	12 Ea (2 ea)	90-Start up Operation
NAS1149D0332J	Washer	12 Ea (2 ea)	90-Start up Operation
NAS1149D0363J	Washer	24 Ea (4 ea)	90-Start up Operation
D2137	Decal(No Step)	6 Ea (1 ea)	150-HandFinish

3093692
 5100421x12 5054536 86
 3071834
 5062615
 5100404?
 5095293

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	CR3212-4-05	36	0	0
	CR3242-4-4	48	408	0
	D5273-043	6	31	0
	D5291-041	18	185	0
	D5491-1	6	0	0
	D5499-1	6	1	0
	D5625-1	24	15	0
	D5627-1	6	0	0
	D5629-041	6	1	0
	MS21042L3	12	4,386	0
	MS24694-S50	48	455	0
	MS24694-S98	18	210	0
	MS27039-1-10	6	342	0
	MS27039-1-30	12	48	0
	NAS1149D0332J	12	2,887	0
	NAS1149D0363J	24	1,919	0
150-HandFinish	D2137	6	15	0

Part Specifications

Specifications could not be found.

all hardware
 was sent to Calgary per IT
 New hardware req'd

Plex 8/9/18 9:12 AM Dart.lajeunesse.marie

DQA: _____ Date: _____



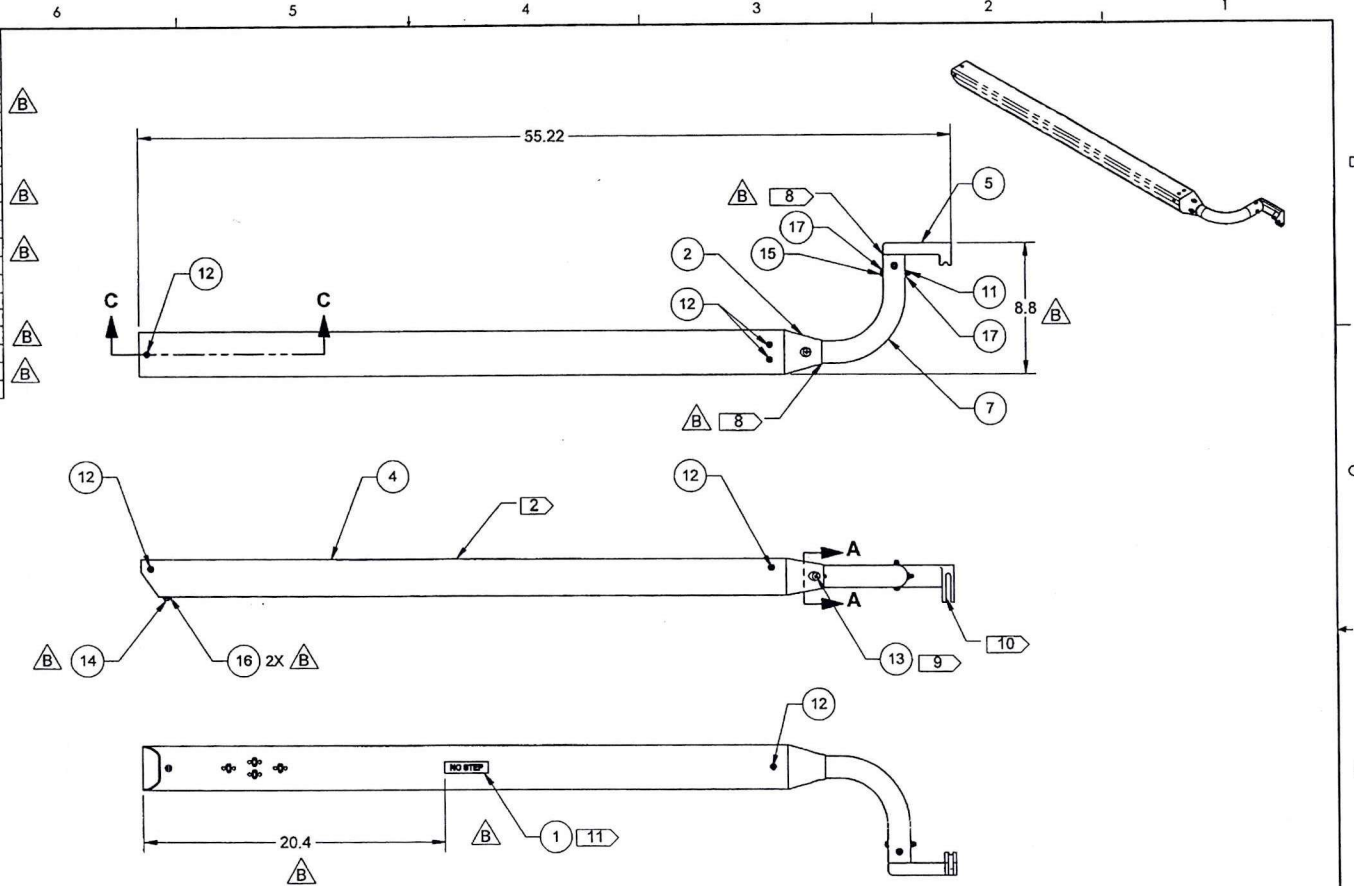
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																		
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																		
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																		
Large Fab ☐	Composite ☐	Supplier ☐																			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval																	
Description Work Order Deviation		Disposition		Completed By																	
				Lead hand / Supervisor Approval Verification																	
				QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐																
OTHER :																					

ITEM	QTY.	P/N	DESCRIPTION
	X	D5491-041	STEP ASSEMBLY
1	1	D2137	DECAL - NO STEP
2	1	D5273-043	END FITTING ASSEMBLY
3	3	D5291-041	ANCHOR NUT ASSEMBLY
4	1	D5491-1	STEP EXTRUSION
5	1	D5499-1	AFT BRACKET MOUNT
6	4	D5625-1	RECEPTACLE
7	1	D5627-1	TUBE
8	1	D5629-041	END CAP ASSY
9	8	CR3242-4-04	RIVET
10	6	CR3212-4-05	CSK RIVET, CHERRY MAX
11	2	MS21042L3	NUT, SELF-LOCKING
12	8	MS24694-S50	SCREW, CSK 100"
13	3	MS24694-S98	SCREW, CSK 100"
14	1	MS27039-1-10	SCREW, PAN-HEAD
15	2	MS27039-1-30	SCREW, PAN-HEAD
16	2	NAS1149D0332J	WASHER
17	4	NAS1149D0363J	WASHER



D5491-041 STEP ASSEMBLY

RELEASED

2019 JUL 30 NO
ECN18-749

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: PRIME PER DART QSI 005 4.2.1.3.3 AND PAINT PER DART QSI 005 4.2.2.4
MASK SCREWS, APPLY BLACK ANTI-SKID PAINT TO TOP SURFACE OF STEP PER QSI 005 4.4
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 - 7) WEIGHT: 5.80 lbs
 - 8) ASSEMBLE WITH PROSEAL 890 USING FIXTURE DT10384
 - 9) TRANSFER DRILL FROM D5273-043 END FITTING ASSEMBLY TO D5627-1 TUBE
 - 10) MASK SLOT PRIOR TO PAINT
 - 11) INSTALL PLACARD IN ORIENTATION SHOWN ON BOTTOM SIDE OF STEP AFTER PAINTING

B	ADDED SHEET 2 AND 4; REVISED TOLERANCE (ZN C4-1, C8-3); ADDED 1X D5621-1 AND 2X CR3242-4-04 (ZN D6-1, D6-3); ADDED SLOT (ZN B6-5); REVISED EXTRUSION LENGTH (ZN C5-5); ADDED MS27039-1-10 AND NAS1149D0332J (ZN D6-1, ZN D6-3); REMOVED C-SINK (ZN B8-5); ADDED D2137 (ZN D6-1, D6-3); ADDED NOTE 11 (ZN A8-1, A8-3); REVISED NOTE 2 (ZN A8-1, A8-3)	VS	18.05.23
A	NEW ISSUE	VS	18.02.27
REV.	DESCRIPTION	BY	DATE
DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VS		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5491	SHEET 1 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	AS350 FLOAT STEP	NTS
DATE	18.05.23	COPYRIGHT © 2018 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED